U.S. EPA
Clean Air Scientific Advisory Committee
FY 2004 Member Biosketches

Clean Air Scientific Advisory Committee (CASAC)

Cowling, Ellis B.

North Carolina State University

Dr. Ellis B. Cowling is a University Distinguished Professor At-Large, Colleges of Natural Resources and Agriculture and Life Sciences, North Carolina State University (NCSU). He received his B.S. (Wood Technology, 1954) and M.S. (Forest Pathology, 1956) from the State University College of Forestry at Syracuse University; his Ph.D. (Plant Pathology/Biochemistry, 1959) from the University of Wisconsin; and his Filosofie Licensiat (1960) and Filosofie Doktor (1970) in Physiological Botany from the Institute for Physiological Botany, University of Uppsala (Sweden). Since 1995, Dr. Cowling has been a Visiting Eminent Scholar, School of Earth and Atmospheric Sciences, Georgia Institute of Technology, Atlanta, GA. From 1978 to 1991, he served as Associate Dean for Graduate Education and Research in the College of Forest Resources at NCSU. Dr. Cowling held an appointment as an Adjunct Fellow, Kennedy School of Government, Harvard University, from 1993 to 2000. Dr. Cowling is regarded as a world leader in air pollution research. He was elected to membership in the National Academy of Sciences (NAS) in 1973. Dr. Cowling is currently Director of the Southern Oxidants Study, a strategic alliance of 490 scientists in 40 universities and 42 federal, state, and industrial organizations who investigate the chemistry, meteorology, biology, and management of ozone and particulate matter pollution and its public health and ecological effects in the southeastern United States. During a sabbatical year in Sweden in 1970-1971, he shifted his personal research to "acid rain" and other aspects of the chemical climatology and biological impacts of airborne chemicals on terrestrial and aquatic ecosystems in North America and Europe. From 1975 to 1983, Dr. Cowling provided leadership for development of the National Atmospheric Deposition Program (NADP); this Interregional Research Program (IR-7) involves more than 200 scientists in the United States and Canada. NADP continues to provide the only reliable continent-scale maps of precipitation chemistry for the United States. In 1978-1979, at the request of the President's Council on Environmental Quality (CEQ), he was one of four scientists who developed the original draft plan for the National Acid Precipitation Assessment Program (NAPAP). This 10-year, multi-agency research and assessment program involved more than 500 scientists who provided the scientific foundation for important parts of the Clean Air Act Amendments (CAA) of 1990. Dr. Cowling's current research interests are in the changes in the chemical climate of industrial regions and their effects on aquatic and terrestrial ecosystems, as well as the use of scientific and engineering knowledge in public decision-making. Dr. Cowling was appointed to the NAS/NAE/IOM/NRC Committee on Science Engineering and Public Policy from 1995 to1998, and he was elected to the Council of the National Academy of Sciences, from 1994 to 1997. Dr. Cowling's other honors and awards include: the Alexander Quarles Holladay Medal for Excellence in Contributions to North Carolina State University, 2002; the Barrington Moore Memorial Award for Biological Research, Society of American Forester, 2000; recipient of the Oliver Max Gardner Award of the Consolidated University of North Carolina for "contributions to the welfare of the human race," 1981; recipient of the North Carolina Award of Achievement in Science, 1972; and election as a Fellow of the International Academy of Wood Science (Vienna), 1971. Dr. Cowling is the co-author of two books, and has 341 publications in referenced journals and other scientific contributions.

Crapo, James

National Jewish Hospital and Medical Research Center

Dr. James Crapo is the Executive Vice President of Academic Affairs; Chairman, Department of Medicine; and Professor of Medicine at the National Jewish Medical and Research Center (NJMRC) in Denver, CO. He is also a Professor of Medicine and the Director of Ph.D. Programs for Graduate Health Care Professionals at the University of Colorado Health Sciences Center. Dr. Crapo received his B.S. in Chemistry from Brigham Young University (1967) and his M.D. from the University of Rochester (1971). Prior to coming to NJMRC in 1996, Dr. Crapo spent over 15 years as the Chief of the Pulmonary and Critical Care Medicine Division at Duke University Medical Center. Throughout his professional career, Dr. Crapo has been active in numerous professional societies, including service on the National Heart, Lung and Blood Institute (NHLBI) Advisory Council and serving as President of the American Thoracic Society. He is also a member of the American Physiological Society, the American Society for Clinical Investigation, the Fleischner Society (where he is also President-elect), the Association of American Physicians, and the Society of Toxicology. In addition, Dr. Crapo is a Fellow of the American College of Chest Physicians, the American College of Physicians, and the Royal College of Physicians, Edinburgh, Scotland. He was a Consultant to the Ozone Review Panel of EPA's Clean Air Scientific Advisory Committee (CASAC) from 1984-1990.Dr. Crapo has maintained a large research program and has numerous Federal-sector grants, primarily with the National Institutes of Health (NIH). In addition, he is the Co-Founder and Director of Antioxidant Research (1994-2003) at Aeolus Pharmaceuticals Inc., a biotech firm directed at the development of soluble, targeted and nitrosylated mimetics of superoxide dismutases to control inflammation-related disease processes. Dr. Crapo also has had a small amount of private-sector laboratory research support. He is the holder of four U.S. Patents, with five other Patents pending, and has in excess of 200 publications.

Hopke, Philip Chair

Clarkson University

Dr. Philip K. Hopke is the Bayard D. Clarkson Distinguished Professor at Clarkson University and the Director of the Center for Air Resources Engineering and Science. In October 1997, he was appointed by the Administrator of the U.S. Environmental Protection Agency (EPA) as a member of the Clean Air Scientific Advisory Committee (CASAC), which is administratively located at EPA under the Science Advisory Board (SAB). Dr. Hopke is presently Chair of the CASAC, and he also chairs both the CASAC Subcommittee on Particle Monitoring and the CASAC National Ambient Air Monitoring Strategy (NAAMS) Subcommittee. In addition, he serves as an SAB Board Member. Professor Hopke is the current President of the American Association for Aerosol Research, and is a member of the National Research Council's Congressionally-mandated Committee on Research Priorities for Airborne Particulate Matter and the Committee on Air Quality Management in the United States. He has previously served on five other NRC committees. Professor Hopke received his B.S. in Chemistry from Trinity College (Hartford) and his M.A. and Ph.D. degrees in chemistry from Princeton University. After a post-doctoral appointment at M.I.T., he spent four years as an assistant professor at the State University College at Fredonia, NY. Dr. Hopke then joined the University of Illinois at Urbana-Champaign, and subsequently came to Clarkson in 1989 as the Robert A. Plane Professor with a principal appointment in the Department of Chemistry. He has served as Dean of the Graduate School, Chair of the Department of Chemistry, and Head of the Division of Chemical and Physical Sciences before he moved his principal appointment to the Department of Chemical Engineering in 2000 (11/2003).

Miller, Frederick J.

Chemical Industry Institute of Toxicology

Dr. Fred Miller is currently Vice President for Research at CIIT Centers for Health Research (CIIT). He has been at CIIT since February, 1991. Dr. Miller received a B.A. and M.S. in Statistics from the University of Wyoming. In 1968, he began a career as a commissioned officer in the U.S. Public Health Service (PHS). As a mathematical statistician involved with the design and analysis of studies on the effects of air pollutants on animals, Dr. Miller became interested in the use of such studies for assessing human health risks. He was assigned to the U.S. Environmental Protection Agency (EPA) when it was created in 1970. In 1971, Dr. Miller received an EPA long-term training award, which led to his doctoral research on the transport and removal of ozone in the lungs of animals and man. He received his Ph.D. in Statistics from North Carolina State University in 1977. During his career with EPA, Dr. Miller served as Director of the Health Effects Research Laboratory's Inhalation Toxicology and Environmental Toxicology Divisions. He was the senior author of the paper that established EPA's policy for considering inhalable particles of potential health concern to be those less than 15 µm in aerodynamic diameter as opposed to total suspended particulate matter. Dr. Miller was heavily involved in Agency activities leading to the development of the PM10 primary standards in 1987. Upon retirement from the PHS in 1989, Dr. Miller joined the faculty of Duke University Medical Center, continuing his long-standing interest in extrapolation modeling through his capacity as an Associate Director of the Duke Center for Extrapolation Modeling. Dr. Miller is interested in developing and implementing research strategies and projects that permit increased utilization of animal toxicological results to evaluate the likelihood of human risk from exposure to inhaled chemicals. His primary research interests include pulmonary toxicology, respiratory tract dosimetry of gases and particles, lung physiology and anatomy, extrapolation modeling, and risk assessment. Dr. Miller is internationally recognized for his research on the dosimetry of reactive gases. He is active in professional societies and consulting on environmental health issues. The author or co-author of more than 150 publications, Dr. Miller received a number of Scientific and Technical Achievement awards from EPA and is the recipient of the PHS' Outstanding Service Medal. He served as an ad hoc consultant to the EPA's Science Advisory Board and Clean Air Scientific Advisory Committee (CASAC) prior to being appointed in October 2000 as a CASAC member. Dr. Miller has also been an advisor to various other public organizations and currently chairs the Science Advisory Committee for the National Jewish Medical and Research Center's (Denver, Colorado) Environmental Lung Center. Dr. Miller is currently the Principal Investigator on a contract with Bespak, Europe, LT, for the conduct of respiratory dosimetry research aimed at targeting drug delivery to the respiratory tract via the nose.

Poirot, Richard L.

Vermont Agency of Natural Resources

Mr. Richard L. Poirot has worked as an environmental analyst in the Air Quality Planning section of the Vermont Department of Environmental Conservation since 1978. His responsibilities include developing the technical support for State Implementation Plans (SIPs) to ensure attainment and maintenance of Federal and State standards for ozone, particulate matter, and regional haze. Given the rural nature and northeasterly location of Vermont, the influence of regional-scale pollution transport is of particular interest. Lacking sophisticated atmospheric chemistry modeling expertise and resources, Mr. Poirot has also developed interests in drawing inference on the nature of pollution sources from analysis of ambient measurement data, and in working in collaborative regional scientific of science/policy forums. For example, he is or has been a participant on Ambient Monitoring and Assessment Committee for the Northeast States for Coordinated Air Use Management, the Data Analysis workgroup for the Ozone Transport Assessment Group, the Science and Technical Support Workgroup for the FACA Subcommittee on Ozone, Particulate Matter and Regional Haze, the Monitoring and Data Analysis Workgroup for the Mid Atlantic/Northeast Visibility Union (MANE-VU), the EPA PM-2.5 Data Analysis workgroup, the Steering Committee for the Interagency Monitoring of Protected Visual Environments, and the US/Canada (Air Quality Agreement) Subcommittee on Scientific Cooperation. Mr. Poirot holds a B.A. degree from Dartmouth College, where he majored in geography and environmental studies. In November 2001, he was appointed by the Administrator of the U.S. Environmental Protection Agency (EPA) as a member of the Clean Air Scientific Advisory Committee (CASAC) of EPA's Science Advisory Board.

Speizer, Frank

Harvard Medical School

Dr. Frank E. Speizer is currently Edward H. Kass Professor of Medicine at the Channing Laboratory of the Harvard Medical School, Boston, MA. Since 1988, he has also served as Co-Director of the Channing Laboratory. Dr. Speizer also holds hospital appointments as a senior physician in the Department of Medicine at Brigham and Women's Hospital, Boston; MA and as senior physician in the Department of Medicine at Beth Israel Deaconess Medical Center, Boston. Dr. Speizer received his Bachelor of Arts (A.B.) degree from Stanford University in 1957, and his Doctor of Medicine (M.D.) from the Stanford University Medical School in 1960. He also holds an honorary Master of Arts (A.M.) degree from Harvard University, which was awarded in 1989. Prior to his current appointment at the Channing Laboratory, Dr. Speizer served as Associate Professor of Epidemiology (Physiology) at the Harvard School of Public Health, Boston (1978-1986), and as Associate Professor of Medicine, Harvard Medical School (1978-1986). Since 1986, he has served as both Professor of Medicine at the Harvard Medical School and as Professor of Environmental Sciences at the Harvard School of Public Health. Dr. Speizer's major committee assignments include serving as: Executive Committee, Dana Farber/Harvard Cancer Center, Boston (1998); Co-Chair, American Thoracic Society Questionnaire Revision Committee (1999); Member, Honors Committee, Harvard Medical School (2002); and Chair, Search Committee for Pulmonary Division Chief, Brigham and Women's Hospital. In October 2001, Dr. Speizer was appointed by the Administrator of the U.S. Environmental Protection Agency (EPA) as a member of the Clean Air Scientific Advisory Committee (CASAC) of EPA's Science Advisory Board. His major professional society involvement includes serving as a Member of the International Society for Infectious Diseases and the American Thoracic Society, National Asthma Research Committee; and as Associate Editor for Environmental Research. Dr. Speizer's awards and honors include: Honorary Fellow, American College of Epidemiology (2000); World Lung Health Award, American Thoracic Society (2000); Member, Institute of Medicine, National Academy of Sciences (2001); Excellence in Women's Health Award, Jacobs Institute of Women's Health (2001); the Charles S. Mott Prize, General Motors Fund for Cancer Research (2001); and the Excellence in Women's Health Award, Brigham and Women's Hospital (2001). An epidemiologist, Dr. Speizer's major research interests are environmentally- and occupationally-related acute and chronic diseases; the natural history of chronic obstructive lung disease; and epidemiologic studies of risk factors for cancer, heart disease and diabetes. He is extensively published in his disciplinary field of expertise.

Zielinska, Barbara

Desert Research Institute

Dr. Barbara Zielinska currently holds the position as Research Professor and Director of the Organic Analytical Laboratory at the Division of Atmospheric Sciences of the Desert Research Institute (DRI) in Reno, Nevada. The DRI is an autonomous research division of the University and Community College System of Nevada (UCCSN). DRI was created in 1959 by a special act of the Nevada State Legislature. Under the act and subsequent actions of the University Board of Regents, DRI is charged with conducting basic and applied research in environmental science. The institute employs more than 400 professional, technical, and support staff. Dr. Zielinska has been active in the air pollution field for more than 20 years and specializes in the analysis of organic compounds in ambient air and in emission sources. Her list of publications includes over 80 papers concerning the analysis of ambient and source samples for polycylic organic hydrocarbons (PAH), nitro-PAH and other toxic air pollutants. She is currently the principal investigator of the following grants and contracts: Section 211(b) tier 2 high-end exposure screening study of baseline and oxygenated gasoline (funded by the American Petroleum Institute); chemical characterization of the exhaust from heavy-duty diesel vehicles to evaluate the performance of diesel technology options, including fuel and catalyst (funded by DOE/NREL, SCAQMD and BP/ARCO); chemical characterization of heavy-duty vehicles, tested on chassis dynamometer (Coordinating Research Council); and the characterization of chemical composition and ambient concentrations of particulate and semi-volatile organic compounds for the California Regional PM2.5/PM10 Air Quality Study (CRPAQS). Dr. Zielinska's recently completed research projects include: detailed chemical characterization of diesel and gasoline exhaust for the DOE/NREL comparative toxicity study; apportionment of diesel emissions in underground mines where heavy-duty diesel equipment is used and assessment of miner's exposures to these emissions (funded by the Health Effects Institute); chemical analyses of collected diesel particulate matter samples in the CRC E-43 project (DOE/NREL); and analysis of speciated volatile organic compounds for the 2000 Central California Ozone Study and 1997 Southern California Ozone Study-NARSTO (CARB). Dr. Zielinska received her M.Sc. degree from the Lodz University of Technology, Poland, and her Ph.D. degree from the Polish Academy of Sciences, both in Chemistry. In May 2001, she was appointed by the Administrator of the U.S. Environmental Protection Agency (EPA) as a member of the Clean Air Scientific Advisory Committee (CASAC) of EPA's Science Advisory Board.